PROFESSIONAL ENGINEER

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This Gladness I Have Known

By D. B. Steinman

I have seen a bluebird on the wing,
Above a field in gold and scarlet hue;
A spray of apple blossoms in the spring
In dazzling light against a sky of blue.

I have known the joy of golden days,
A grassy bank, a stream in jeweled glow;
Then oak and maple leaves in autumn blaze,
And pines in winter, crowned with sunlit snow.

God, I thank Thee for the gift of light
And weep for those who dwell in endless night.

A Hobby Issue for Engineers

Vol. 40

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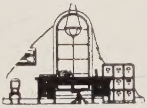

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M. E. McIVER, Editor

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Dr. Steinman, internationa ly known bridge engineer, an his family have established th David B. Steinman Founda tion, Inc., for the purpose o making contributions an grants to educational institu tions and other worthy causes The principal objective is t make gifts to engineerin schools for establishing schol arships, awards, and loans t aid deserving students to com plete their engineering studie or to pursue full-time gradu ate work in engineering.

At reception in his honor at Paris, Ju 29, 1954, Dr. Steinman receives th "David B. Steinman Medal of Recog tion of the Professional Engineers France." E. M. Guiton, President of th Professional Engineers of France, pr sents the medal, with Mrs. Steinm standing alongside as an honored gue

The Value of Hobbies

By DR. D. B. STEINMAN

FOR a full life, a happy life, three things are required: A goal; wor that you love, in line with the goal; and hobbies for leisure hours.

Hobbies, naturally and properly, change through the years, with ag interest, and opportunities. We must not let any hobby ride us; we chang our hobbies when they outlive their timeliness, or their richness of satisfaction.

In my life, I have enjoyed a rich variety of hobbies, adapted to m interests, opportunities for service, and latent or aspiring talents. Only few are listed here:

Boyhood—Science, Astronomy, Building scientific appartus, Artisti woodwork.

Youth—Outdoor life (camping, horseback riding, fishing, sailing canoeing , mountaineering) ; Social Work (Scoutmaster, Boys' Clubs) Public Speaking; Mandolin; Western life.

Middle Life—Sharing hobbies with my children (Games, Philately Chess, Music, etc.) ; Organization Work, Lecturing; Mathematics (Cre ative and Recreational) ; Color Photography; Inventions (Stereo-Photog raphy, etc.).

Maturity—Literary writing; Poetry; Gardening; Bird Study; Trave Enjoying (and Collecting) the best in music.

. . . Don't Let Your Hobby Ride You . . .

H. A. WAGNER

Past President, A. A. E.

Elsewhere in this issue of PROFESSIONAL ENGINEER the nature and therapeutics of hobbies are discussed at length. Hobbies, which should afford release from the tension of jobs and enrich personality, may have quite the opposite effect if they gain a mastery and make undue demands on the time, physical strength, or finances of those who indulge unwisely in them.

If one's avocation becomes an obsession it may siphon off creative energies that should be expended on a lucrative vocation. A hobby may absorb time that should be spent in reading journals, attending meetings, or other activities necessary to civic and professional development. This is particularly true of the "solo" type of hobby, in which the individual resents the intrusion of those who do not fully understand or appreciate the special skills involved in his craft or the unique worth of items in his collection. In the pursuit of his hobby, he does not grow in understanding of people. He may, instead, find solace in his hobby for his failure to enjoy people, with unhappy effects in both his social and business relationships. Such absorption may wall him off from normal participation in the activities of his immediate family.

No one should allow himself to become enamoured of a hobby which puts him under harmful physical strain. Crafts which are tedious to the point of eyestrain must be indulged in only with discretion or they will become hateful. Activities which are beneficial at 25 or 30 may be sheer dissipation at 45 or 50 because of the strain they impose on a not-so-young heart.

Whatever therapeutic potentialities a hobby may have can be destroyed by a sense of guilt, if the individual has not enough will or “won't” powe to limit expenditures in connection with it. An occasional extravaganc may be stimulating and justified, but the man who spends an unwarrante proportion of his income in indulgence of a hobby is, even though he ma not acknowledge it to himself, harassed by his own selfishnesss and prodigality.

It must not be assumed from the foregoing remarks that all sol hobbies are, *per se,* iniquitous. The man whose work keeps him in constan contact with the public or who, because he directs the activities of a grou of employees, is concerned during his working day with minor and majo problems of human relationships, may need a hobby that can be indulge in solitude. He may be justified in spending hours on his hobby late a night that could more profitably be spent in sleep—if he could sleep. It i probably more restful to get out of bed, and fashion a pipe rack in hi basement workshop than to remain in bed—and count imaginary shee To the man with a sedentary job, strenuous exercise may be more tha recreation. It can be a beneficent hobby, if he practices it with moderatio Very few hobbies prove that pleasant but unreliable theory that the “be things in life are free.” Indulgence even in a self-liquidating hobby involve some expense. Although expenditure for tools and materials may be greate than the financial returns, the pleasure and recreation obtained by th hobbyist may more than balance the account. Nothing that has been writte here should leave the impression that expense, provided it is in proportio to income and to other necessary expenditures and savings, is a prohibitiv factor in choosing or pursuing a hobby. Here also it is discretion, self-control, common sense that should govern practice of a hobby.

Moderation is the element which determines that value of a hobby He who does a thing as an amateur (which literally means strictly for th love of doing it) will reap rewards from it, qualities which carry over int his human relationships and business activities. The man who practices a hobby with nice regard for the amount of time, money, and energy he ca afford to use upon it will be carefree, buoyant, and invigorated by it So long as he rides the hobby, all is well. If a man becomes too engrossed i a hobby to indulge in it with moderation—and a clear conscience—the hobby rides him.

An excellent hobby for all Americans

“I have one hobby,” says Zazu Pitts. “My country. I want my Constitution as it was written, not watered down by innumerable amendments. If more Americans would read our Constitution, and the Congressional Record, we would be in less danger of losing our liberties today.”

Function of Hobbies in an Assembly Line Universe

M. P. McGIRR,

Co-Author "Technologists' Stake in the Wagner Act"*

HOBBIES have assumed an importance in modern life second only to religion as a factor in the mental health of our people. They have gained importance from two forces which are apparently contradictory—a greater amount of leisure time and increasing tension due to several types of pressure.

Theoretically, at least, the 40 hour week makes available to the average man many more hours of leisure time, or at least free time, than his forbears enjoyed. Not only because he spends fewer hours on the job, but because many of the home chores which previously absorbed free hours are now taken over by specialists, the individual has many hours which he can divide as he sees fit among a variety of optional activities. He may use these "free hours" in any proportion he prefers, for sleep and rest, for professional study, for civic, fraternal, religious and social projects, for physical exercise, for entertainment, or for hobbies which coincide with one or more of these activities.

Early retirement, made possible by industry's widespread adoption of pension plans, by the Federal Social Security system, and by the attractive and practical annuities and endowments set up by insurance companies which have steadily gained in popularity in recent years, a new "leisure class" has been created. Indulgence in a hobby is often a man's automatic response to "time on his hands".

A feature of the Production Show, staged by Chicago Technical Societies Council in 1947, was a panel discussion of "The Employment Status of Technical Men Over 40". Dr. Arthur H. Steinhaus, professor of physiology at George Williams College, Chicago, discussed very frankly the physiological and psychological factors which, in some degree, are responsible for "age discrimination". The adjustments which come after 40 must be initiated in the 20's, he said, if a man is to have a useful, satisfying existence. While impairment of sight, and hearing may prove handicaps, the greatest hazard, he said, is mental crackup. One in every ten adults, he stated, will probably need psychiatric help after 40. To insure mental health Dr. Steinhaus recommended a "first aid kit" including these items:

1. A very good friend to whom one can talk unreservedly and from whose objective view of frustrations and fears the troubled individual can get a true perspective.
2. A cause, greater than himself, to which he can make a significant

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*Published by American Association of Engineers and used extensively. Still the only comprehensive treatise on the subject.

contribution and in which he achieves "recognition".

3. A philosophy of life that explains to the individual in a satisfactor way the impact of the world on his life.
4. A hobby of absorbing interest, in which he can escape from hi routine and his frustrations.

It is fruitless, Dr. Steinhaus said, to prolong life expectancy unless a the same time man's usefulness is similarly extended. The adjustment t leisure in the period after retirement should be initiated while a man is in hi prime, in order that he may have interests to give zest to his existence an continued usefulness after he is freed from the necessity of earning a living Every man should prepare his mental first aid kit well in advance of th time he will need it by developing a philosophy of life, embracing a worth while cause, and interesting himself in a hobby, pleasurable in his prime an vitally necessary in his later years of leisure.

Opportunity, provided by leisure, only partially explains the popularit of hobbies; it does not explain the "urge", the "motive", conscious or un conscious, which impels hobbyists to lavish time, thought, energy, an money on particular activities. Certainly in a huge proportion of such acti ities the individual's obsessive interest is a form of escapism—an effort either instinctive or rational, to relieve tension created either by his job o by social pressure.

Every intelligent person is harassed today by a sense of insecurit which arises from his awareness of national and international problems never precisely defined, that still portend destruction of safeguards on whic his forbears could unreservedly rely. Dangers arising from internationa conflicts of ideologies are undeniably greater today than they were at th turn of the century, and more menacing to our freedom. They impinge upo individuals and their small provident plans for the future as world confli never has in the past. The tension they create in individuals is enhance because through publications, through radio and television, the threat which they represent are incessantly forced on individuals' attention in al their leisure hours unless they resolutely focus their thoughts on activitie which, through absorbing interest, exercise the demons of doubt and fear.

Competition, which accounts largely for the efficiency of business, take its toll of the individual in tension of another kind. The desire to get ahead to meet quotas, to beat last year's figures, to hold a job, or to keep the pac set by leaders makes demands upon an individual which may offset the relax ation that theoretically stems from a shorter work week. Those extra hours if not channeled into activities of compelling interest, may be spent in fruit less review of the frustrations that have tormented the individual during th day and thus intensify rather than relieve the tension of the job. Even thos jobs which require little in the way of responsibility, practically nothing except manual skill, should be offset by a hobby which is the antidote fo acute monotony, and for the peculiar tensions it engenders.

Many of the pressures which build tension are entirely dissociated from jobs. Social pressure seems to increase with density of population. Everyone, as he struggles with traffic or fights for a place in crowded public vehicles, en route to and from his job, comes to the conclusion at some time every day that there are just too many people in the world. There are just too many organizations, he concludes, as he tries to do his part in civic and professional and church organizations, or chauffeurs his teen-age youngsters on their round of high school parties and games, Scout meetings, and other widely assorted activities. Looking for a place to park, waiting for a table in a crowded restaurant at lunch time, queueing up to have purchases checked by the cashier in a self-service store, and a hundred other time-and-patience consuming trivia play their part in tightening tired nerves.

Ideally the 40 hour week should enable every individual to allot 8 hours to work (including time spent going to and coming from work), 8 hours for rest and sleep, and 8 hours for recreation. Actually, the 8 hours assigned to recreation must cover a variety of activities. Only those whose work is entirely routine and devoid of administrative or executive responsibility can dismiss from mind all thoughts of the job after the whistle blows for closing time. From the time allotted to recreation an ambitious man must filch the hours he spends on "contacts" and "personal development". This is the time he gives to meetings of professional, business, and civic organizations. It must cover his necessary reading of books and periodicals and special reports—his "must" list, not his reading for entertainment. Some of it must be used for grooming and for prescribed physical exercise, and for regular trips to his doctor and dentist. This is the only portion of his time except vacations that can be used to keep him in close touch with his youngsters. After all these demands have been met, he can, perhaps, salvage a few hours each week for pursuit of a hobby. A wise man, despite all the other claims upon his time, energy, and money will nevertheless interest himself in a hobby.

What is a Hobby?

What is a hobby? Can hobbies be precisely defined? Perhaps not. Broadly, a hobby is any activity in which an individual indulges for pure love of doing it. This does not rule out, of course, crafts and other pursuits which are lucrative. Creative activities may result in products which have practical or monetary value, but they cease to be hobbies when the profit motive dominates. In general a hobby is an avocation, not a vocation. Nevertheless, a hobby may be an artistic offshoot of a vocation, a complement to, not a repetition of the work which one does for a living. The science teacher may find great relief from the discipline problems of a classroom and the drudgery of grading papers in a well equipped dark room where he experiments with photography. An areonautical research engineer may justify his hobby of building and flying model airplanes because of the sociability it occasions in contrast with the seclusion of his regular worl In general, however, hobbies are more relaxing if they are quite dissociate from daily work, and if they contrast sharply with conditions imposed b such work.

To one man riding, hunting,
fishing, golf, or tennis
may be a hobby

To another, these are merely sports or recreations to be pursued for the sak of exercise or comradeship. The difference lies in the attitude of the individual toward one of these activities. If the pursuit is a hobby it is also a art, and all the appurtenances thereto are important. To it the real hobbyis gives a sort of devotion and he likes to follow his hobby alone or only i company of those who have a similar enthusiasm for it.

Reading, listening to the radio, or watching TV may be a hobby i such a pursuit is anything more than an effort on the part of an individual t secure a brief respite from the chatter of his family and from his ow thoughts. Perhaps all three of these activities should be called relaxatio not genuine hobbies. Yet all three of these pursuits may be hobbies if thei devotees follow some plan and derive intellectual enjoyment from them From them most people draw many of the benefits that accrue from purposeful pursuit of a real hobby. In general, however, these activities ar enjoyed *per se,* as relaxation, and not to the exclusion of a hobby.

What is the motivation for a true hobby? Is there a single explanatio for focusing interest on an activity, and for the mounting enthusiasm an sustained drive which characterize pursuit of a hobby? Most hobbyists ar motivated, consciously or unconsciously, by escapism, an effort to relie tension, but this is probably the only quality common to all hobbies.

The choice of a hobby may be completely fortuitous. A chemical engineer goes to a convention in Florida and becomes interested in collectin seashells, interested enough that he arranges to spend his next vacation a a shell-hunter's paradise on Florida's west coast. During the winter he clean and polishes and mounts his specimens and reads all available literatur on his new hobby. His vacations become zestful because of the enthusiasm engendered by his hobby. A statistician, bedeviled into the enterprise b his wife, helps her refinish and repair a battered antique chest picked u in a secondhand store and becomes enamored by the job. Thereafter h prowls around junk shops for more bargains and converts his basemen into a workshop where he transforms dilapidated pieces of furniture int things of beauty for his home.

Some individuals, less opportunistic, coolly choose a hobby and equi themselves for it, developing enthusiasm as they follow it. During the depression a financier who had faced, with something less than placidity, losses of a million or so in paper profits on various holdings, bought (at a great bargain, he said) for several hundred dollars someone's collection of American stamps, and worked assiduously at mounting the collection and completing it, to take his mind off his poverty.

Choice or chance may determine the channeling of enthusiasm into a particuar hobby. Likewise there are many basic human traits which account for the enthusiasm itself. It is not difficult to understand the impulse back of collecting—the pack rat instinct is strong in most of us. No matter whether one collects match covers or first editions, the basic urge is the same. In many ways, collecting is the most satisfying type of hobby. It is wholly objective and one's achievements are obvious. Without being obsessive, collecting can permeate other activities and give them spice. The true collector always feels that he may by sheer luck find a treasure anywhere, and the more unlikely the source, the greater the pleasure he derives from it. One may collect snuff boxes or buttons, miniatures or milk glass, postcards or pitchers, and find others who share his enthusiasm.

"Do it Yourself" Hobbies Afford Pleasant Hours

Another common impulse is the basis for most of the handicraft hobbies—the desire to manipulate things, to do intricate things with our fingers. Individuals under emotional strain or suffering from boredom while forced to sit in silence at a public gathering will "doodle" violently with a pencil, or tie bits of string into fantastic knots and loops, or fold paper into tricky geometric patterns. In manual dexterity many people find compensation for hours of restraint on a job—much as children find joy in violently wiggling toes after a stiff shoe has been kicked off. Operating a clattering press or a chattering jog saw, violently sanding a rough board, hammering a pattern into copper or aluminum may give infinite relief to a man or woman who has spent a day courteously listening to complaints at the service desk of a light and power company or in the adjustment bureau of a department store. Many hobbies are valuable simply because they give vent to surplus energy or exercise unused muscles made taut by a sedentary job.

In all of us the creative urge is present, though not in the same degree. Unless the impulse is educated out of us, we like to make things, and to make them according to our own specifications and by our own methods. To manipulate inanimate things and mold something to his own desires is sheer luxury for the man who spends his day moving people about and coordinating their efforts as if they were disks on a checkerboard. To plan, and make a complete magazine rack is a joy to the man who works on an assembly line all day, performing only one operation, and that dictated by others.

In hobbies people often find outlet for talents which are not stron enough to be a basis for a vocation. The little theater movement is the embodiment of hobbies of many workers in this community enterprise. Acting directing, or painting scenery, many people find use for talents which fo one reason or another they have not commercialized. Some of them hav not been able to afford training; others have obligations which do no permit them to gamble on a career in art or show business. Musical gift are channeled in the same way into community activities, such as orchestra glee clubs, choral societies, church choirs, study clubs, and talent show Hobbies are sometimes compromises between career dreams and the practical necessity of earning a living.

In these hobbies people satisfy, in some degree, the almost univers desire for recognition. Through them we flee from a sort of anonymit Our associates identify us by our physical characterestics. They glean som idea of the real person under those physical characteristics from our action Still, in a yearning sort of way, we are all conscious of the existence of ourselves as individuals, known only to ourselves. Many people, by means artistic hobbies, strive for recognition and seldom, except momentari achieve it. We can't all sing or play a musical instrument, act, or pa pictures. Still we strive for expression of this indefinable and, to othe imperceptible innermost self. We create outward symbols of what beautiful within us. One gifted with a "green thumb" does it by means a gardening hobby. It may take form in so practical a hobby as cooki where an inner conception of beauty is expressed in the tangy fragran the enticing color, or interesting texture of artfully prepared food. hobbies we become articulate, without words, and overcome in some degr the loneliness which every human being endures.

Crusading Hobbies

By M. E. McIVER,

National Secretary, A.A.E.

SELF-INDULGENCE is a characteristic of most hobbies. They ma be all the more therapeutic for that quality. In an assembly line universe, people are justified in seeking diversion and entertainment of suff ciently compelling interest to confirm their convictions that they ar individuals. A hobby may, however, be altruistic; it may be identified wit a "cause" to which an individual gives devotion, and the hobby may b very closely identified with the individual's philosophy of life. In America Association of Engineers there are many such hobbyists. Here a few them will be accorded recognition that they deserve, and the editors o Professional Engineer hope that this report will encourage citation o others who can be memorialized in later issues of the magazine.

Among A.A.E.'s elder statesmen, in point of calendar age, Isaac Ford of Redlands, California has "seniority." But at 92 he is remarkable chiefly for the youthful character of his enthusiasm. Mr. Ford has a hobby of compelling interest; he is supremely interested in the beauty that can be created by deft use of line and color in landscaping. Furthermore, he demands utility as well as beauty. Here is a letter from the perennially youthful Mr. Ford, to the Secretary, which well explains his hobby:

"Thank you kindly for your letter of October 11th. In this you inquire about 'hobbies for Retired Engineers,' and in this short letter I want to tell you how I came to have a hobby about growing roses.

"Engineers of the past, I believe, worked far more outdoors than the present generation. For quite a number of years of my past life I worked outdoors in laying out hilly and irregular ground for orchard planting—throughout fruit growing areas in Southern California, orange groves, apple orchards, deciduent fruit trees, etc. Over 10,000 acres, for a million trees, or over.

"In that way, I was always in close touch with nature, and learned first hand about the habits of trees, shrubs and flowers of this wonderful community of this Southland that has made such a remarkable growth during the past quarter century; and still continues so to do.

"Originally coming here for health reasons, it has been possible for me to live outdoors a large part of my long life—a course which is happily possible in this semi-desert of Southern California.

"Even now, at 92 years of age, I spend a large portion of my time in my hobby of a garden of lovely roses. And this gives me opportunity to associate with a large number of fellow members of our Redlands Horticultural Society; also of the Pacific Rose Society of Pasadena, and also of the International American Rose Society with headquarters in Columbus, Ohio. Not only the growing of this lovely flower but the additional pleasure of giving them to our friends, and particularly to the shut-ins, and those who are not able to grow flowers, or who are laid up for one reason or other.

"As you see from my enclosures, my present income depends largely upon fruit growing—an interest in Ford's Snow-Line Orchards in the Mountains nearby, as well as from an orange grove on which I continuously lived since planting it out in 1886. My wife passed away nearly 20 years ago, but my daughter keeps me comfortable and happy throughout these years."

What Mr. Ford has not mentioned in his letter is the free advisory service he gives to home owners and to civic organizations dedicated to beautification of city streets and parks. For the Beautification Committee of the Redlands Chamber of Commerce he prepares bulletins which are widely distributed to home owners, in which he recommends plantings that will insure beauty throughout the year. Here is a passage from one of his bulletins which typifies the intriguing nature of his suggestions:

“At my home I have two Catalina Evergreen Cherry trees, ten fee high, that were originally planted as a screen, but which now have thei outside foliage drooping to the ground, making an ideal ‘playhouse’ fo little children in the warm summer. With a ground coating of white rive sand, and an old rock flume nearby for a ‘river’ for play boats, it is wonderful and safe refuge for the little tots. The cherries are quit ornamental, but of little food value, except for the birds who like to nibbl at them.”

He recommends for Southern California trees with such enticin names as “Chinese date or jujube,” or “purple leaved Thundercloud plu with lovely shell pink blooms, dark maroon foliage, and small tart fruits. The very names suggest a sort of promised land—almond, pineapple guav with fuschia-like flowers and green globes of fruit, Kadota figs, Hachiy Persimmon. For the tiny yard or patio he advises dwarf trees in tubs, an believe it or not, vegetable and herb borders for walks, colorful and edibl Despite the exotic names which run through his bulletins, there is the kin of realism one might expect from an engineer in his recommendation drouth resistant, preferably native plants for decorating school groun where systematic sprinkling or irrigation is impractical. Here is a m dedicated to a delightful mission—the beautification of his adopted state.

A Floridian’s Hobby

Down in Florida, Ernest A. Taylor fights for preservation of o of the few remaining stands of giant cypress. This is not his job; it his hobby. Just recently he led a small party on a camping trip into th Corkscrew Cypress Swamp. The jeep, he says, is the only vehicle th can successfully negotiate this vast region of prairie and swamp lan The trip took them through a magnificent and mysterious area, he say among giant Bald Cypress trees, underbrush so dense that they wer forced to use sheath knives to cut their way through, and they travele under a canopy of vines which has reached the tops of 80-foot tree Large gracefully spreading ferns, air plants and rare orchids, found no where else in the United States, make one feel, he said, that Alice visite only a second rate Wonderland. “The entire area is virgin, just as was left when God, in His infinite wisdom, created this wonderful an beautiful region where everything grows lush and balance in nature perfect.” Here also is the largest Ibis-Egret Rookery in the United State and it is the haunt of the osprey and blue heron.

On the trip Mr. Taylor made notes which formed the basis of a 67 page manuscript and took pictures which were processed in colored slide to show to schools, civic clubs, Audubon and conservation groups, an others interested in preserving intact for man’s future enjoyment one o nature’s wonderlands. He has been a member of the dynamic group whic has fought for purchase of Corkscrew Cypress Swamp and its futur management by the Audubon Society, a project which necessitated raising $145,000 in a period of a few months. They hope to raise ultimately $300,000 for purchase and maintenance of the project. This is a hobby great enough to claim a man's whole heart, and one that should be shared with every engineer in the Southeastern section of the U. S. A.

An Eminent Engineer Cites His Hobbies

To many people writing is a hobby of considerable gratification. Expression of thought, emotion and belief in printed form is, indeed, a gift, but an art that can be acquired to a satisfactory degree with practice and a little study. And since engineers, generally speaking, are known for their inability to use the printed word convincingly, some form of writing might be a helpful as well as a pleasant hobby.

Perhaps no other engineer is so abundantly blessed with the ability to use the English language so simply, yet so convincingly, as the internationally eminent bridge engineer, Dr. D. B. Steinman. He has written many books, theses and papers on both technical and non-technical subjects. At times he expresses his sentiments and ideals in verse. Poetry seems to be a hobby which he has acquired during the past few years. What do engineers grow eloquent about? Well, let's see. Here are two poems selected as good examples.

The Star Of Bethlehem

A million stars proclaimed Thy glory,
With new-born light in one of them,
The brightest in Thy diadem,
To point the way to Bethlehem,
When Love Divine was born.

A million hearts enshrine Thy story;
Aglow with love as carols ring.
We hear the angel voices sing
As once to shepherd and to king
On that first Christmas morn.

A Dream, A Song, A Prayer

A bridge of strength and grace in mystic blend
Embodies spirit treasures that transcend
The steel and stone. The builder's dream is there,
Each curve a song, each soaring line a prayer.
A dream, a song, a prayer—these three combine
To make the bridge a beacon and a shrine.

So with our lives, O Builder of our Span
Help us to weave these strands into Thy plan
In threefold blend: a dream to point the goal;
A song to lift the heart; a prayer, the soul!
Grant us these gifts of love, or life is bare;
Give us a dream, a song, a thankful prayer!

We invited Dr. Steinman, who is a past president of the Association, Life Member Number One, and author of A.A.E.'s Engineer's Vow of Service, to briefly state his opinion on hobbies and his statement appears on page 3.

Herman A. Wagner has devoted many years to the work of A.A.E., serving on many committees, and assisting youngsters as well as oldsters in their many problems. Members who have not made Mr. Wagner's acquaintance either by correspondence or in person have missed an important part of their Association membership. His hobby is a most useful one.

A.A.E. Is His Hobby

At headquarters of A.A.E. another great-hearted engineer pursues hobby which is also a "cause." H. A. Wagner battles there valiantly, bu philosophically, for the welfare of young engineers. When he retired fro active practice of mining engineering a number of years ago he volunteere his services to A.A.E. His first big undertaking was that of putting th association's service department on a solid business basis, in cooperatio with another wonderful person, the late Kenneth Talbot, son of the well known Prof. A. N. Talbot, of Illinois University. It became a great dea more than a professional personnel service. It grew into a practical research bureau in which A.A.E. learned what employers wanted from engineers. It was this agency which queried employers on the effectivenes of engineering schools, the adequacy of engineering education. At interval the agency analyzed the market for engineering services, to discover trend in engineering, non-technical factors that influence salaries and promotions and to find the flaws in the then existing methods of buying engineerin services.

Mr. Wagner was alert from the very beginning to the trend towar unionism among sub-professionals and engineers-in-training set in motio by the Wagner Act. Over a period of years he painstakingly studied th impact of the Act on professional employees and helped beleaguered professionals maintain their "real freedom of association" under the Act. He was the moving spirit in the publication of "Technologists Stake in the Wagner Act," which was an influential factor in revision of the Wagner Act and the safeguards embodied in the Taft-Hartley law.

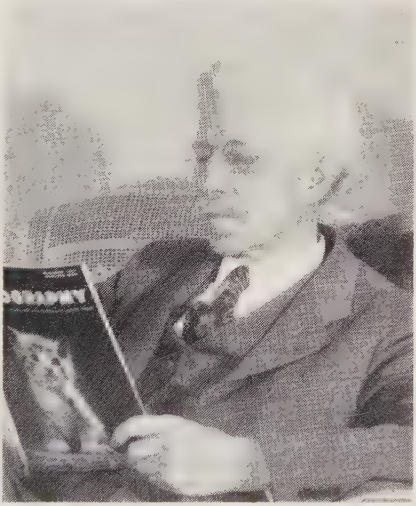
He was the leader in A.A.E.'s long fight against dishonest trade and correspondence schools which for years had preyed on unsophisticated youths, leading them to believe that they could qualify for high-salaried engineering jobs with a smattering of training.

Through the years Mr. Wagner has crusaded without ever becoming stuffy or disillusioned. He concurs strongly in the belief that "human nature is human nature the world over" and no matter how clearly he sees their faults and their folly, he buoyantly fights for the engineers of the future. His is a hobby and a cause. It embodies much of the philosophy of life which keeps him young and perpetually in love with living.

An Oregonian Chooses Photography

Orrin E. Stanley of Portland, Oregon, is one of the very early members of A.A.E. Was extremely active in his state during the formative years of the Association.

He has always kept in contact with National Headquarters and his inspirational letters have been much appreciated. He is a Life Member, and a Member of whom we are very proud.



Photography is another hobby rather common to engineers. Several interesting snap-shots have been received at National Headquarters from that grand octogenarian, Orrin E. Stanley of Portland, Oregon. He was a lively spark-plug at A.A.E. conventions in the early days, and will be so remembered by some of the older members of A.A.E. A photograph we value very much is one taken of Mr. Stanley by Mr. Stanley, and is here introduced to "pretty up" the article.

Encouraged by his son, he sent copies of this self-taken photograph which he made in his own "dark room," to his friends, including th National Secretary, who values the picture because of his loyalty to A.A.E and his active participation in the Association's early program. "America Photography," a copy of the magazine he was holding when the camer snapped him, thought well enough of the picture to print it with commen His Christmas greeting cards bearing some of his choice "snaps" are littl gems.

Gardening In Virginia

This part of the article devoted to individual hobbies would not b complete if we did not mention one of our grand old-timers, a nonagenaria who was at one time connected with the Virginia Fisheries Commissio Fred E. Ruediger, of Accomac, Va. He joined A.A.E. in 1922, retainin an active membership down through the years. This marvelous man kee in touch with National Headquarters and his inspiring letters to the National Secretary, written sometimes under handicaps, have truly demonstrated how great a life can be, if one wills it that way. Even at hi advanced age, he has for a number of years spent many hours in hi garden, planting and caring for shrubs, which as he says in particular re erence to three young fig bushes planted not too long ago, "with the a of water toted to keep the ground around them moist, are doing well an have some young figs on them. They are now about two feet high, a if the figs do not mature they will next year and will be enjoyed by som one else as one should think of others who will bear the burden in tim to come." Wonderful men, these engineers, not only do they build for th future, but they plant as well for the comforts and enjoyment of others

Group Hobbies

Phoenix Chapter of A.A.E. has sponsored activities which are virtually collective hobbies. They had great fun with their "Lemme Engineeri column which appeared regularly in a Phoenix newspaper for a peri of months. In it qualified members of the chapter answered a phenomena number and assorted kinds of inquiries directed to the column by puzzle readers. They investigated grievances, answered questions pertaining t history of the area, and directed readers to proper agencies for help i their technical problems.

It was Phoenix Chapter which salvaged historical Indian marke stones from a dump heap in back of the Capitol and arranged for thei proper display. Vic Householder, who has sparked many Associatio projects, was the instigator of this one. The stones, unlike any other found in the area, were of a peculiar shape and had apparently been use to mark the boundaries of pre-historic Indian farms.

At luncheon meetings the chapter uses a bell cast from metal obtaine from Old Ironsides, the first Atlantic cable, and many other specimens o historical copper and copper souvenirs donated by the members.

These stones were found near Tolleson, Arizona on land which was irrigated 1,000 years ago by early Indian residents of the Salt River Valley. Water was taken from the Salt River in large canals and distributed over fields of corn, beans, squash and cotton in much the same way our farmers do today. Indications are that these stones were taken from the river bed, carried to the fields and set up as markers to designate property lines.

Other chapters are probably collaborating in equally constructive hobbies. Headquarters wants to hear about them—would like stories with pictures to illustrate the activities in which groups share a hobby.

Hobbies Are Essential

The Royal Bank of Canada issues a most interesting and inspirational monthly letter on timely subjects. Several of these Letters have had a bearing on some of the Association's activities. We like the manner in which they set forth their opinions, and we found one of their bulletins on "A Business Man's Hobbies" appropos to the theme of this issue; therefore by permission of the Royal Bank we have briefed this bulletin for our readers.

The play spirit is an essential ingredient of recreation. The more complicated civilization becomes, and the more elaborate the machinery of living is made, the more necessary it will be to create a temporary retreat from the material obligations of everyday life.

The work we do to earn a living is activity toward an end, and play is activity as an end. At the same time, play is not aimless. Play, fun and laughter are agents of health. They give repose to the usually busy brain centers and tone up the muscles. . . .

If there were nothing else done by play, one thing justifies our indulging in it: play helps us to forget our worries and at the same time tones up our minds for a fresh attack on the cause of our worries. . . .

To have a hobby is to indulge in some form of play which exercise our hands as well as our brains, and to take a line that cures our despondent worried, jittery feelings. The machine age has tended to make our job routine. There are so many of us doing single parts of big jobs that w are inclined to feel individually unimportant and insignificant. When w indulge in a hobby through which we see something taking complete form under our own hands, then we gain self-confidence and self-respect. . . .

The hobby should be something in which a person may excel and in which he takes a keen delight. There is relaxation and comfort in doin something for the sheer delight of doing it. This means, naturally, tha one's hobby may change form many times in a life-time, but even th changes are good, because every one gives us something new to thin about, a new approach to the world, a new way of seeing things.

In this busy world, all of us need a little more rest than most of u are getting. We need a change, and a change is a rest. The rest may be few minutes' stretched-out relaxation, or a half hour working at or gloatin over the results of a hobby, or a walk, or a whirl at some physical trainin apparatus. It may even consist in doing something that the janitor shou do, something that demands stretching, cramping, stooping and hammeri that exercises muscles. Hanging a picture on the wall, or moving one a new location, can be restful in this sense of the word.

Most people wish to do something specific as a hobby, something cre tive. And the field is wide. One may learn to play a musical instrument, explore space with a telescope or minute life with a microscope, or wat birds, or collect insects, or probe rocks, or trace the steps taken by explorer and adventurers. Every part of Canada abounds in opportunities for indulging hobbies that carry with them the reward of health-giving activit and mental stimulation.

The first order of business toward better use of leisure time is to d something. The second suggestion for wise use of leisure time is to g started at once. The third hint is to be careful. The fourth suggestion is t be reasonable about the spending of leisure time.

A well-balanced hobby life will include spare time activity designed t provide physical health, intellectual growth, contemplation, social enjoyment, creative effort, audience relaxation, and periods of solitude.

The business man needs space and air in his mind. He wants tha sort of serenity which seems to be impossible of attainment in the hurly-burly of everyday business life. It comes in part from active creative hobbies, and in part from quiet, solitary intellectual pursuits. Boredom ha no place in leisure.

That day is ill-spent in which a mature person has not done somethin constructive along the lines of his interest, or in which he has been to depressed to notice the brightness of the sun, the color of grass and o flowers, the mystery of the sea and the lure of moonlight on the water.

There is no ready-made hobby suit into which all people will fit. Ever person makes his own pattern. By making it wisely, he may cure a present ill, fill a great want, or prevent physical and mental ailments. And, as is said pungently by one of the philosophers: "It is disgraceful for a person to grow old in self-neglect."

Must We Be Nervous Wrecks?

Among the interesting bits of wisdom, inspirational articles, timely clippings and informational data that reaches the Editor's desk was a mimeographed copy of a sermon delivered by Dr. Carl E. Martenson of Grand Rapids, Michigan. Because the thoughts expressed are very much in line with the subject matter of this issue, we are glad to publish the Message in capsule form.

We are fast becoming a nation of nervous wrecks. How often do you hear someone say, "I feel like a nervous wreck" or "He's just a crazy, mixed-up kid." Ours is the aspirin and the sleeping pill age. We are rushing, pounding, jumping and jerking through life, leaving an increasing number of casualties along the roadside. It is a paradox that although we have the easiest life in history, mechanically, we never were so tied up and tense, psychologically. Electrical appliances make housekeeping a breeze. Why, then, are there so many nervous breakdowns among women, so that one out of every two hospital beds in America is occupied by an emotionally disturbed patient? Men no longer have to pump water, chop wood, get up at dawn, work three hours before breakfast, and then toil until dusk. Why, then, do so many drop dead in their 40's or wind up with ulcers at 50?

The truth is that neither our minds nor our bodies are geared to the constant strain which mechanized living puts upon us. We travel faster, eat faster, talk faster, and die faster these days. We get bored faster, we succeed faster, we fail faster. Our cars are so much faster than our highways that no gambler in his right mind would take a chance on some of them.

How can we live in this age of anxiety without becoming nervous wrecks?

For one thing, we must learn to get ahead of work, and stay there. It is not hard work that exhausts us, but anxiety over our work. It is the sense of being driven by our work, always behind, always trying to catch up, that builds up dangerous tensions within us. Much of our tension comes from poor habits and attitudes toward our work.

Again we must avoid over-stimulation. There are limits to our physical and emotional strength. Some of us do not like to believe that we cannot burn the candle of energy at both ends and get away with it. Some of us will not believe that our bodies require regular, adequate periods of sleep.

Eating and drinking, sleeping and walking and exercise are not outside the province of religion; they are as much a part of religion as prayer and worship and daily work. They vitally affect temper and temperament, and our whole way of looking at the world. A healthy body makes for a healthy mind.

If we are not to become nervous wrecks, we must learn to let go. W must have peace of mind. We must practice the principle of alternation which runs throughout the world of nature. Everywhere there is ebb an flow, action and reaction, contraction and expansion, effort and relaxation We must learn to intersperse periods of work, with periods of relexation so that the hours of fishing and golfing become as sacred as the most pressing business appointment.

The glory of everything consists in its organization. Great music i nothing but a lot of separate sounds which anyone can make, but whe those sounds are organized, how glorious! A home is nothing but a grou of separate individuals, but when fine parents organize them, how marvelous! Let us organize our lives, so that we get ahead of our work—an stay there.

Business Is Booming In The Basement

By

Keith H. Remy*

The "easy chair" of retirement for 70-year-old O. A. Olson of Ame Iowa, isn't the traditionally talked-about plush chair in front of the livi room fireplace. Instead it has taken the form of a supervisor's hard o seat, commanding a full-scale industry carried on in the basement of modest, but comfortable home.

An invention developed because "he wanted something to do in h spare time," has grown to prominence all over the world -a lettering instrument used by engineers and draftsmen in nearly every major country. started back in 1917 when Olson was an instructor in the Department Mechanical Engineering at Iowa State College. He was dissatisfied wi the devices used for making guide lines for drawing and lettering; therefor he began developing one of his own.

The early years of the lettering guide were difficult and many improvements had to be made. Finally in 1919, he made his first sale. At firs most of the guides were all but given away to teachers and drawing instructors until they gained recognition in engineering drawing circles. Th story of the instrument is one of step by step improvement.

The Ames Lettering Instrument, as it was named, was originally ma from Swedish steel. Then the steel shortage of World War II force Olson to seek other materials and he started manufacturing the plast drawing guides that are popular today.

In his basement factory, Olson and his helpers turn out approximatel 100,000 lettering instruments yearly. The central room in the basemen

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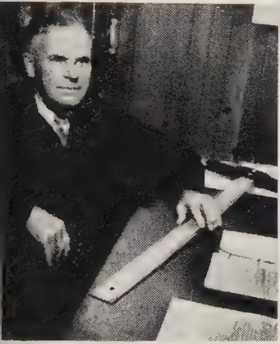
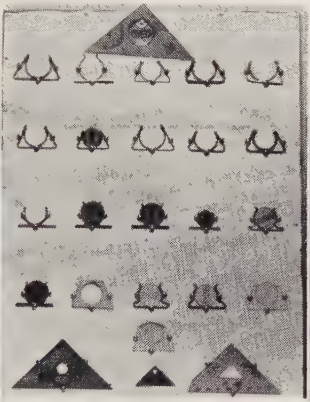
**Mr. Kemy is a senior at Iowa State College, majoring in journalism, and becau his story fits in with the theme of this month's issue, we are glad to assist a beginn by publishing his interesting article.*

production lines is a modest office, furnished in knotty pine with a carpeted floor . . . much like any man's den. The walls are adorned with pictures of Olson's sporting hobby, fishing. It's here that all of the business of the nanufacturing company is transacted and where the lettering guides are assembled and packaged. A remodelled furnace room makes up the production line of the lettering instruments. All of the jigs used in the production



O. A. Olson at his desk in his basement office, with one of his Tee-Squares



Evolution of Ames Lettering Instrument.

Wayne, an Engineering student at Iowa State, and Rita Conaway assemble and package the lettering instrument.

were designed by the inventor, and altogether his factory has 14 machines, owered separately by electric motors. He employs two full-time workers nd two part-time helpers. Olson estimates that he has helped over 100 ollege students through school by furnishing part-time employment for hem.

In the lettering guide manufacture, Olson begins with plastic pieces oughly cut into the approximate shape of the discs and frames. Small iscs are placed in a jig and the 31 guide holes are drilled accurately and eparately in 12 seconds. The discs are stamped with the calibration and irm name, then moved to the countersinking machine. All of the tiny holes re made conical by this machine in about 12 seconds. Afterward, the discs re machine turned to make the groove into which the frames are fitted.

In the meantime, the frames are planed, then stamped at another mahine. The frames are then turned to produce the interlocking lip. It takes bout 40 minutes to groove a box containing approximately 300 frames. The ettering guides are then assembled, wrapped and placed in small envelopes efore being boxed for shipping.

The Olson Manufacturing Company produces over 100,000 lettering nstruments annually and has standing orders for 1000 per month. At one ime during World War II the company was 40,000 behind in orders. But his isn't the only product that Olson manufactures. In a rebuilt coal bin, rotractor Tee Squares of all sizes are produced. The Olson product eatures a two-headed square, with protractors to produce angles quickly and efficiently. A special swivel joint allows the protractor heads to mov without wearing on the instrument. Projection boxes, used in teachin orthographic projection, and snaps for slide rule cases are two of th smaller, but equally significant products of the basement factory.

But where does the 70-year-old Norwegian get his tremendous driv and ability, Olson was born in Norway and moved with his parents to th United States, where they pioneered on a farm in Buena Vista Count Iowa. After finishing all of the schooling that was available, he worked i a store for three years.

Seeking further education, he worked his way through Iowa Stat College in five years, graduating in 1908 with a B.S. Degree in Mechanic Engineering. While he was in school he worked with the Hart-Parr Far Machinery Company.

Olson was employed by the Cushman Motor Company for five yea following his graduation. While with Cushman, he invented a valve seatin machine that is still in use. In 1913, Olson joined the staff in Iowa State Department of Mechanical Engineering, where he was an instructor a assistant professor for 22 years. In 1914, he was awarded a professio degree in mechanical engineering.

In 1935, he started the Department of Engineering Drawing and w professor and head of the Department till his retirement in 1948. Ols has several hobbies to which he devotes his "spare time." He fishes arden in the northern United States. Also, in his home he has a large collecti of relics and antiques from the Scandinavian countries.

One of his most remarkable and admirable hobbies is helping to bui churches. He is Lutheran by faith and spends much time and effort working with the building of worship centers like the new, modern Luthera Student Center in Ames. He delights in entertaining college youth in hi home.

Olson's time spent on the development of the lettering instrument ha been worth while. He has letters from 45 countries on every continen Most of his products are distributed to companies and schools in the Unite States, Canada, Mexico and South Africa. The Ames Lettering Instrume is featured in all of the major textbooks and catalogs for engineerin drawing.

One of the largest engineering manufacturing firms describes th Olson product in its 1953-1954 school catalog as follows: "The Ame lettering device is one drafting aid that every instructor, student, an draftsman will find indispensable.

"The neater and faster lettering resulting from its use has made it th favorite in schools and industry throughout the nation."

But Olson still isn't satisfied with his self-styled "easy chair" of retirement. He is continually searching for new or improved drawing an drafting aids and for increased efficiency or better manufacture in hi basement factory.

The Illinois Engineering Council

The annual meeting of the Board of Direction, I.E.C., was held on December 11, 1954, in the auditorium of the Western Society of Engineers, Chicago, with 38 directors in attendance. Representing A.A.E. was Donald M. Cook and H. A. Wagner, and Ellis Danner, who is also Vice President of the Council and chairman of the Committee on Public Affairs.

The principal activity of the Committee on Public Affairs for the year consisted of a study of the number and distribution of professional engineering positions in public agencies in Illinois. It was suggested that an important function of this committee should be to encourage the efficient utilization of competent professional engineers in public works.

The delegates approved a motion that the Illinois Engineering Council support an additional appropriation in the next session of the Legislature to complete the topographic mapping in Illinois, as suggested by the Legislative Committee, George C. Laughlun, chairman.

The Council approved the suggestion that past president's certificates of appreciation be awarded to persons who have served as President of the Council since 1939.

W. R. Marston, representing the Western Society of Engineers, was elected president, Daniel K. Chinland, A.I.E.E., second vice president, and John G. Duba, I.S.P.E., secretary-treasurer.

The Council is made up of the following groups:

American Institute of Chemical Engineers (Chicago Section)
American Institute of Electrical Engineers (Central Illinois Section) (Chicago Section) (Illinois Valley Section)
American Society of Civil Engineers (Central Illinois Section) (Illinois Section)
American Society of Heating and Ventilating Engineers (Illinois Chapter)
American Society of Mechanical Engineers (Chicago Section)
American Society of Tool Engineers (Chicago Chapter)
Chicago Association of Consulting Engineers
Illinois Association of County Superintendents of Highways
Illinois Association of Highway Engineers
Illinois Society of Professional Engineers
Illuminating Engineering Society (Chicago Section)
Institute of Radio Engineers (Chicago Section)
Society of Women Engineers (Chicago Section)
Western Society of Engineers
American Association of Engineers (Illinois State Assembly)

Serving A.A.E. as directors in the Council are Theodore B. Johnson, Peoria, Ellis Danner, Urbana, Donald M. Cook, Winnetka, H. A. Wagner and M. E. McIver, Chicago.

Books For Engineers

Simplified Design of Structural Steel, Harry Parker, M.S., Prof., Arch. Construction, School of Fine Arts, Univ. of Penna., 2nd Ed. John Wiley & Sons. $5.75.

Many new features have been added to this 5 by 7¾—244-page book including revised tables of properties of structural shapes and current working unit stresses, formulas, and design procedures recommended by the A.I.S.C. Latest and most useful information on every aspect of structural steel design including necessary tables are included.

Chemical Process Principles, Part 1. Material and Energy Balances, 2nd edition, Olaf A. Hougen and Roland A. Ragatz, both professors of Chemical Engineering, Univ. of Wisconsin, and Kenneth M. Watson, Dir. of Research, The Pure Oil Co. John Wiley & Sons. $8.50.

An up-to-date work which gives modern treatment to material and energy balances of chemical processes, utilizing the broad theoretical background necessary for the solution of industrial process problems. A new chapter on mathematical procedures and conversion of units has been inserted in the revised edition. New problems have also been added.

Magnetic Control of Industrial Motors, Gerhart W. Heumann, Industry Control Dept., General Electric Co., 2nd Edition, John Wiley & Sons. $9.50.

This book is one of a series written by General Electric Company authors for the advancement of engineering practice. Many changes have taken place in the design of control components and systems since the first edition appeared, and the authors have therefore included new material to bring the text up-to-date. Reference material has been thoroughly modernized and emphasis has been placed on the theoretical background underlying recognized National Standards and Safety Codes. A valuable book.

Glass Reinforced Plastics, Phillip M gan, M.A., Editor, "British Plastic Philosophical Library. $10.00.

Glass reinforced plastics is a mar sided subject, and a proper study of involves organic chemistry, desi moulding processes and the major plications. Each of these branc might, in itself fill a small book, a this volume is an attempt to gather gether the essential facts for the gene reader, yet explained in sufficient det for the specialist. Major fields of plication at present are the automob aircraft, and boat-building industrie

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Steam, Air and Gas Power, William Severns, John C. Miles, both fessors of M.E., Univ. of Illinois Howard E. Degler, Tech. Dir., M ley Co. 5th Ed. John Wiley & S $6.50.

This new edition has been brou up-to-date in every respect. It is cise, readable and well illustra Considerable new material and ef tive photographs have been ad Fundamentals of thermodynamics well presented. A good book on subject.

Development of the Guided Miss Kenneth W. Gatland, F.R.A.S., Ed. Philosophical Library. $4.75.

The second edition is profusely ill trated, completely revised and grea enlarged. New chapters deal with pr lems of propulsion, research into roc techniques and requirements, and p war work on guided bombs.

Hugh Roy Cullen, Ed Kilman Theon Wright, Prentice-Hall. $4

A story of American opportun about one of the world's wealthiest most individualistic men. Mr. Cul barely finished the fifth grade but made college possible for millions his generous gifts. He was a doer, w "pitch-in-and-perform" his creed. inspirational book that every you American should read.

WILEY BOOKS

INTRODUCTION TO AERONAUTICAL DYNAMICS

By MANFRED RAUSCHER, *formerly of M.I.T.* An integrated study of fluid mechanics and mechanics of solids applicable to aeronautical engineering. 1953. 664 pages. illus. $12.00.

PROTECTIVE ATMOSPHERES

By A. G. HOTCHKISS *and* H. M. WEBBER, *of the General Electric Company.* Complete information on the various phases and uses of protective atmosphere. 1953. 341 pages. illus. $7.00.

CIRCUIT THEORY OF ELECTRON DEVICES

By E. M. BOONE, *the Ohio State University.* Places emphasis on the circuit theory of the electron tube rather than the physics of electron devices. 1953. 483 pages. illus. $8.50.

ELEMENTS OF HEAT TREATMENT

By the late GEORGE M. ENOS; *and* WILLIAM E. FONTAINE, *of Purdue University.* Outlines in *basic* terms the mechanical properties of metals and alloys and how they are changed through heat treatment. 1953. 286 pages. illus. $5.00.

AN INTRODUCTION TO POWER SYSTEM ANALYSIS

By FREDERICK S. ROTHE, *of the General Electric Company.* Covers the entire field of power system engineering, including synchronous machine theory, transformer theory, and transmission line theory. 1953. 187 pages. illus. $5.00.

MEASUREMENT TECHNIQUES IN MECHANICAL ENGINEERING

By R. J. SWEENEY, *of Lehigh University.* Presents the measurement techniques commonly used in the performance testing of power equipment. 1953. 309 pages. illus. $5.50.

ALUMINUM IN IRON AND STEEL

By S. L. CASE, *Battelle Memorial Institute, and* K. R. VAN HORN, *Aluminum Company of America. Edited by Frank T. Sisco.* Summarizes domestic and foreign data on the effects of the addition of aluminum to steel and iron. 1953. 478 pages. $8.50

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